

that a muscle must lose more than 50 percent of its capacity before it can be clinically identified as weak. It is assumed that the extra 50 percent is present as a reserve to permit muscles to function for prolonged periods, providing the endurance necessary for normal activities such as walking. With this concept, any muscle that is clinically weak due to a neuromuscular disorder has lost its reserve capacity. Recent studies have shown that in muscles from experimental animals made weak by neuromuscular disease or by artificial means there is evidence of damage on physiologic and histologic testing following exercise. Therefore, is a *strengthening* exercise program beneficial or harmful for these patients when normal activity requires near maximum effort from their weakened muscles?

It is well-known that serum levels for the muscle enzyme creatine phosphokinase can increase to values several times normal levels following exercise in normal persons as well as in patients with weakness. Many of us have also seen examples of myoglobinuria in otherwise normal persons following strenuous exercise. Both suggest the possibility of muscle injury from exercise. This is not intended to suggest that all exercise may be injurious to patients with muscle weakness. Muscle function will deteriorate with disuse and this is exaggerated in patients with weakness due to neuromuscular disorders. Therefore, some activity is essential. This information does not allow us to state how much exercise is appropriate for patients with muscle weakness; however, it does suggest that caution must be used in prescribing strengthening exercises for patients with neuromuscular weakness.

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### Sex Counseling for Postmyocardial Infarction Patients

UPON RECOVERY from an acute myocardial infarction, a patient all too frequently is told to rest at home for two weeks, gradually increase activity over the next four weeks and then return to his occupation. Often the last direction is "Take it easy."

In giving directions, seldom does a physician

broach the subject of sexual function. If the subject is raised by the patient, discussion is usually cursory or avoided. Today, it is an accepted maxim that discussion about sexual activity is as important as advice about diet, exercise or any other biologic activity. Fears, hearsay and misconceptions make the decision regarding sexual intercourse difficult for both cardiac patient and mate. Lacking professional advice, patients may have apprehension with resulting anxiety, personal frustration and general unhappiness. The physician should encourage an open discussion with both patient and mate. Specific guidelines and details dispel the fear and anxiety.

The expenditure of energy in healthy subjects has been studied by Hellerstein. During foreplay, there is a skin flush with a sense of warmth and a gradual increase in the respiratory rate, heart rate and blood pressure. The physiologic measurements return to normal abruptly after orgasm. Electrocardiographic changes are infrequent, but may show transient S-T depression and some degree of arrhythmia.

Is there danger of sudden death? Very little. Ueno, the Japanese pathologist, carried out 5,559 autopsies in cases of sudden death over a period of four years. Of these, only 34 of the patients died during coitus; all of these patients had had severely damaged hearts.

Proper positioning permits satisfactory intercourse when partners understand that assuming a given position can minimize strain on the heart patient. The recommendation is that the mate assume the role of the active partner from intromission through orgasm. In most uncomplicated cases of acute myocardial infarctions, patients can resume their normal sexual activity four to six weeks after discharge from hospital. If the patient can exercise a level of 6 to 8 calories per minute, such as vigorous walking, it is generally safe to recommend that he can resume sexual activity. In those patients who have complications of chest pain, serious ventricular arrhythmias and pump failure, coitus must be denied or greatly curtailed both as to frequency and active participation.

Counselors should discuss with patients the increased danger after a meal; reaction to alcohol, which increases the heart rate and drops the blood pressure, and hazards of extremes in temperature, fatigue, tension, and furtive, anxious conditions with time restrictions.

Patients take great satisfaction in returning to

a normal way of life. Complete understanding between partners is inherently necessary. Then, a loving unhurried sexual relationship can bring matchless contentment.

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### Advances in Bladder Rehabilitation

FOR SPINAL INJURY PATIENTS an ideal bladder is free from an indwelling catheter, infection and autonomic dysreflexia. He or she should be able to have adequate, easy voiding and a normal genitourinary tract. The use of intermittent catheterization in establishing a reflex bladder is successful in about 70 percent to 90 percent of patients. Prolonged intermittent catheterization (20 weeks or more) is expensive and frustrating for patients and is usually associated with a dysfunctional neurogenic bladder. Patients without a balanced bladder following intermittent catheterization are also prone to silent renal damage. All such failures usually are due to detrusor-sphincter dyssynergia or increased urethral resistance, or both. Increased urethral resistance can be due to bladder neck and posterior urethral fibrosis, urethral strictures or an enlarged prostate. Inadequate opening of the bladder neck and posterior urethra during voiding can also be due to bladder-bladder neck dyssynergia or bladder-external sphincter dyssynergia. Dyssynergia between bladder and bladder neck usually results from increased alpha adrenergic activity. This can be shown on cystometrographic and urethral pressure profile studies before and after intravenous ad-

ministration of phentolamine. In such patients a rise in blood pressure during cystometrographic studies also occurs. Dyssynergia between detrusor (bladder) and external urethral sphincter (periurethral striated muscles) can be shown on simultaneous cystometrographic and periurethral striated electromyography. All high paraplegics (above T5) and quadriplegic persons whose conditions are complicated with dyssynergia usually also have autonomic dysreflexia. Urodynamic studies involving simultaneous cystometrographic and pelvic floor electromyographic studies, flow rates, urethral pressure profile and voiding cystourethrographic studies (radiologic) may lead to the diagnosis of urethral "plumbing" problems.

Transurethral external sphincterotomy and bladder neck incisions can relieve obstructive urethral pathology and provide adequate voiding in such patients. This leads to pronounced improvement in bladder configuration, relief from vesicoureteral reflux, amelioration of autonomic dysreflexia and also significant improvement in hydronephrotic renal pelvicalyceal system. Routine urodynamic studies in patients with inadequate voiding could provide an early diagnosis of detrusor-sphincter dyssynergia and bladder neck obstructive problems and thereby make it possible to prevent urologic complications.

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